

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

BARBERRY ERADICATION

BURROWING NEMATODE

CITRUS BLACKFLY

EUROPEAN CHAFER

GOLDEN NEMATODE

GRASSHOPPERS AND

MORMON CRICKETS

GYPSY MOTH

HALL SCALE

JAPANESE BEETLE

KHAPRA BEETLE

MEXICAN FRUIT FLY

PHONY PEACH AND PEACH

MOSAIC DISEASES

PINK BOLLWORM

SOYBEAN NEMATODE

SWEETPOTATO WEEVIL

WHITE-FRINGED BEETLE

ECONOMIC INSECT SURVEY

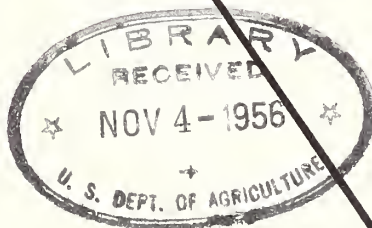
PESTICIDE REGULATORY ACTIVITIES

Plant Pest Control Branch

Agricultural Research Service

UNITED STATES DEPARTMENT OF AGRICULTURE

COOPERATIVE PEST CONTROL PROGRAMS



UNITED STATES
DEPARTMENT OF AGRICULTURE
LIBRARY



BOOK NUMBER

A464.4

508519

R3122C

CROPS REGULATORY AND CONTROL PROGRAMS

The regulatory and control programs in which the Department participates in cooperation with states, the Republic of Mexico, and Canada fall in three broad categories. These concern (1) incipient infestations of newly-introduced pests which through joint effort may be confined to very small areas or eradicated, (2) introduced pests that have become established over substantial areas in this country and where an effort is made to prevent or retard spread to new areas, and (3) insects native to or generally distributed throughout their ecological or host range in this country which outbreak, periodically, causing widespread damage or destruction of crops in areas often remote from breeding grounds.

The Department's authority for participating in these programs is contained in the following general and specific Federal legislation: The Insect Pest Act of 1905 (7 USC 141-144), the Plant Quarantine Act of 1912, as amended (7 USC 151-167), the Pink Bollworm Act of 1930 (46 Stat. 67), the Incipient or Emergency Outbreak Resolution of 1938 (7 USC 148-148e), the Department of Agriculture Organic Act of 1944, as amended (7 USC 150-150g), the Insecticide, Fungicide, and Rodenticide Act of 1947 (7 USC 135-135k), the Golden Nematode Act of 1948 (7 USC 150-150g), the Halogeton Glomeratus Control Act of 1952 (7 USC 1651-1656), and Public Law 518, the Miller Pesticide Residue amendment to the Food, Drug and Cosmetic Act of 1938 (68 Stat. 511).

Responsibility for preventing or retarding the spread of introduced pests into uninfested areas is usually shared by the infested states and the Federal Government. Historically, coastal states, particularly those with extensive sea-and-airport facilities receiving foreign traffic are most vulnerable to the introduction of new pests. When new species, capable of causing severe damage to crops in this country, penetrate the first line of defense which is port-of-entry inspection, the affected states and the Federal Government have jointly-supported programs to eradicate, suppress, or prevent further expansion of infested areas. In many instances such operations are of greatest benefit to the agriculture of noninfested states which cannot, except through their Federal Government, contribute to the programs that protect them. As an example, the golden nematode which currently infests only a few thousand acres on Long Island, New York, is a potentially serious pest of potatoes and tomatoes wherever they are grown in this country. Maine, Idaho, Pennsylvania, California, North Dakota, Colorado, and other states are beneficiaries of this program even though they contribute little to it except to help with surveys within their own boundaries.

On the other hand, the quarantined states and the growers therein have an inescapable interest in a program of this kind. Where only a part of a state is infested, as in the case of the golden nematode, Hall scale, and others, there may be substantial uninfested areas within their own boundaries exposed to infestation. Furthermore, articles produced for interstate shipment within these infested areas provide revenue for the state of origin. When a regulated commodity is offered for inter- or intrastate shipment outside of a quarantined area, it is necessary that a certification be made as to its freedom from the pest if it is to

be allowed to compete freely with commodities produced outside of the regulated area. To this end growers frequently provide material aid in carrying out the provisions of a quarantine. States assist in providing inspectors and otherwise contributing to the program.

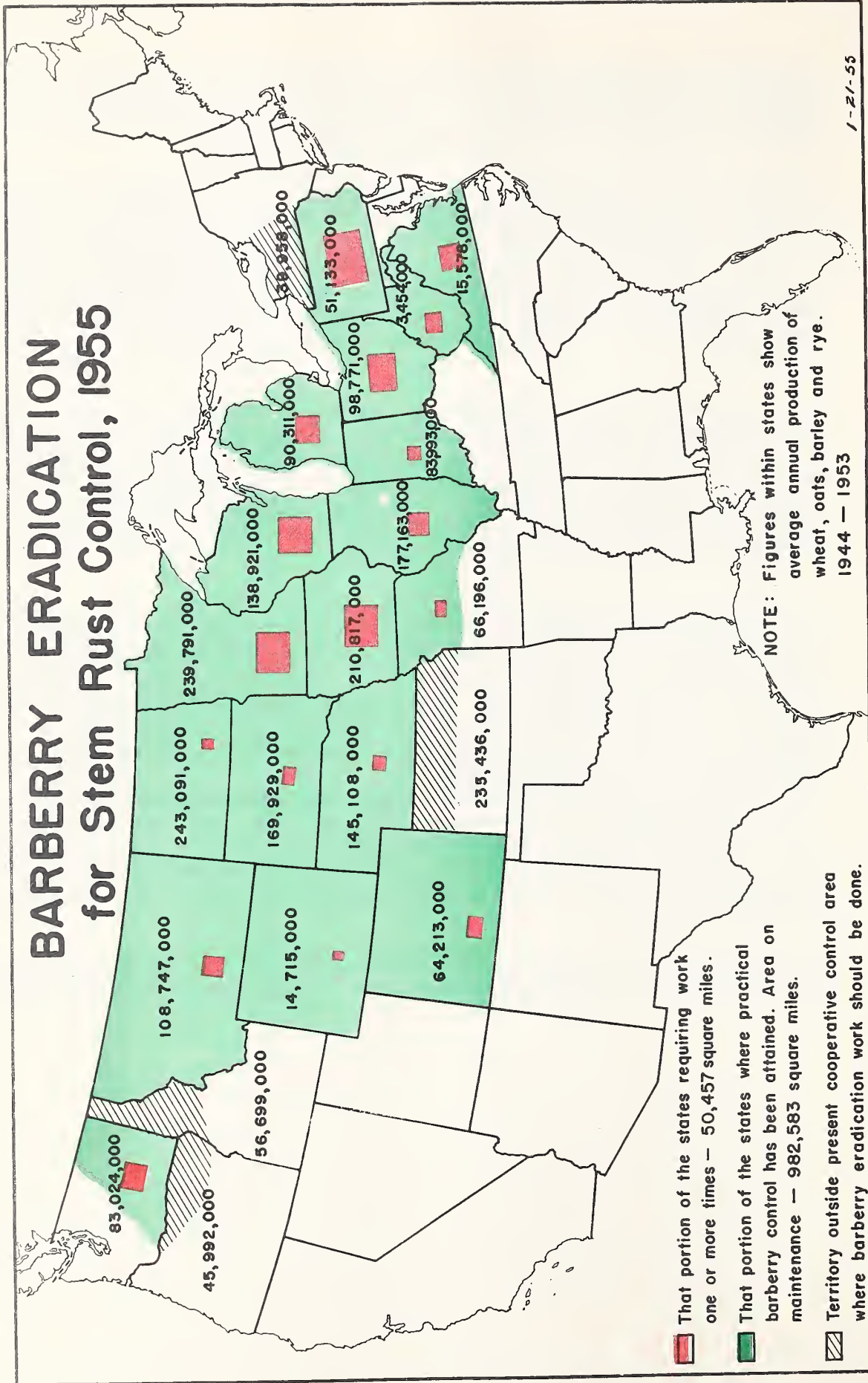
As a part of the Department's regulatory and control program, cooperative surveys develop information that is needed to advise growers and others as to the prevalence of insect pests likely to cause widespread damage to crops. Agricultural agencies responsible for disseminating information on crop pests such as the Extension Service, Experiment Stations, State Departments of Agriculture, and other state and industrial organizations that engage in educational activities, rely on this source of information.

The effective control of many major crop pests requires timely treatment on an area-wide rather than an individual property basis. The survey provides a basis for forecasting outbreaks, thus contributing substantially to more effective and less expensive controls. Through the prompt release of information obtained, farmers are warned of impending epidemics and industry has advance knowledge as to where and when large quantities of insecticides will be needed.

The administration of the Federal Insecticide, Fungicide, and Rodenticide Act is an important phase of the Department's regulatory and control responsibility. This legislation provides assurance to farmers and other users of pesticides that the products they purchase can be depended upon to control pests without being injurious to people, useful plants, and animals. The Act protects the public from the sale of worthless or dangerous materials by authorizing the Department to give careful scrutiny before marketing, to formulas and labeling of pesticides. Samples of pesticides collected from dealers' stocks and importations are checked to determine whether or not they are in compliance with the law. If they are in violation, appropriate corrective action is taken by the Department. Operations under the Act have greatly contributed to wider public confidence in the use of pesticides resulting in substantial savings to crops and livestock.

There follows a brief appraisal of each of the projects of a regulatory or control nature in which the Plant Pest Control Branch is participating.

BARBERRY ERADICATION for Stem Rust Control, 1955



BARBERRY ERADICATION

Barberries are intermediate hosts of fungus causing black stem rust of small grains; also sources of new races of the fungus. Barberries were introduced from Europe by the colonists. The fungus causing stem rust is native.

Objectives. The objective of the barberry eradication program is to protect small grain crops from damage by the stem rust disease through the elimination of the barberry. Barberries serve as local sources of rust outbreaks and are the only known sources of new races of the fungus causing the stem rust disease. This requires surveys in the important grain-growing areas of the country to locate and destroy rust-spreading barberry plants; enforcement of state and Federal quarantines to prevent re-establishment of rust-susceptible plants in eradication states; rust surveys and physiological race determinations to locate unusual rust races which lead to remaining centers of rust spread; and technical assistance to property owners who organize community or area wide eradication programs.

Needs. The eradication of barberries appears to be progressing satisfactorily except in a few northern states where cooperative programs have not been undertaken. There is a continuing need for the development of methods by which individual farmers or groups of farmers can protect their grain from invasion of stem rust.

Potential for Accomplishment. The drastic reduction in the number of rust-spreading barberry plants in important crop areas of the country is an important factor in reducing losses from rust. Periodic epidemics can be expected until all alternate host material has been eliminated; until grain varieties are available which are resistant to known races of rust; or until an individual farmer can protect himself regardless of the prevalence of spores.

Effectiveness. In states where the barberry plant is the only important source of stem rust there have been no damaging losses in barberry-free areas since eradication. Local destructiveness outbreaks of stem rust have been eliminated in territory cleared of rust-spreading barberry plants. However, outbreaks may be expected to reoccur in areas affected by long distance windborne spores until barberry eradication is completed and varieties resistant to prevalent damaging races have been developed.

Research Support. The rust laboratory at St. Paul, Minnesota, is operated with the cooperation and support of the University of Minnesota, the Minnesota Experiment Station, and the Field Crops Research Branch of the United States Department of Agriculture. Other state experiment stations, the Rust Prevention Association, representing industry, the Canadian Dominion Rust Laboratory, the Mexican Department of Agriculture, and the Rockefeller Foundation, also cooperate in rust studies and other phases of research activities.

Additional or Modified Legislation. The current legislation is believed to be adequate to meet present program needs.

BURROWING NEMATODE 1955

The known infestation of the burrowing nematode is confined to about 110 square miles in 6 Florida counties. In this area there are 325 groves with 3,000 acres of citrus and 35 nurseries that are infested. The burrowing nematode causes a condition known as "Spreading Decline", which is one of the most serious problems confronting the citrus industry.

■ COUNTIES INFESTED

▨ COMMERCIAL CITRUS PRODUCING AREAS

BURROWING NEMATODE

Known to exist in this country for thirty years or more. May be native. Attacks a wide range of hosts. Soil and climatic factors may have important bearing on extent of damage.

Objectives. The immediate objectives of this program are to assist the State of Florida in delimiting infestations of the burrowing nematode as a basis for control action, establish the presence or absence of the organism in other citrus growing areas of the country, determine the means by which the burrowing nematode is spread from one grove to another, and learn its potential as a pest on hosts other than citrus.

Needs. Improved methods of survey, additional information on means of spread, and effective treatments that are not injurious to host plants.

Experience with the golden nematode has proved of great value in initiating prompt action in this program.

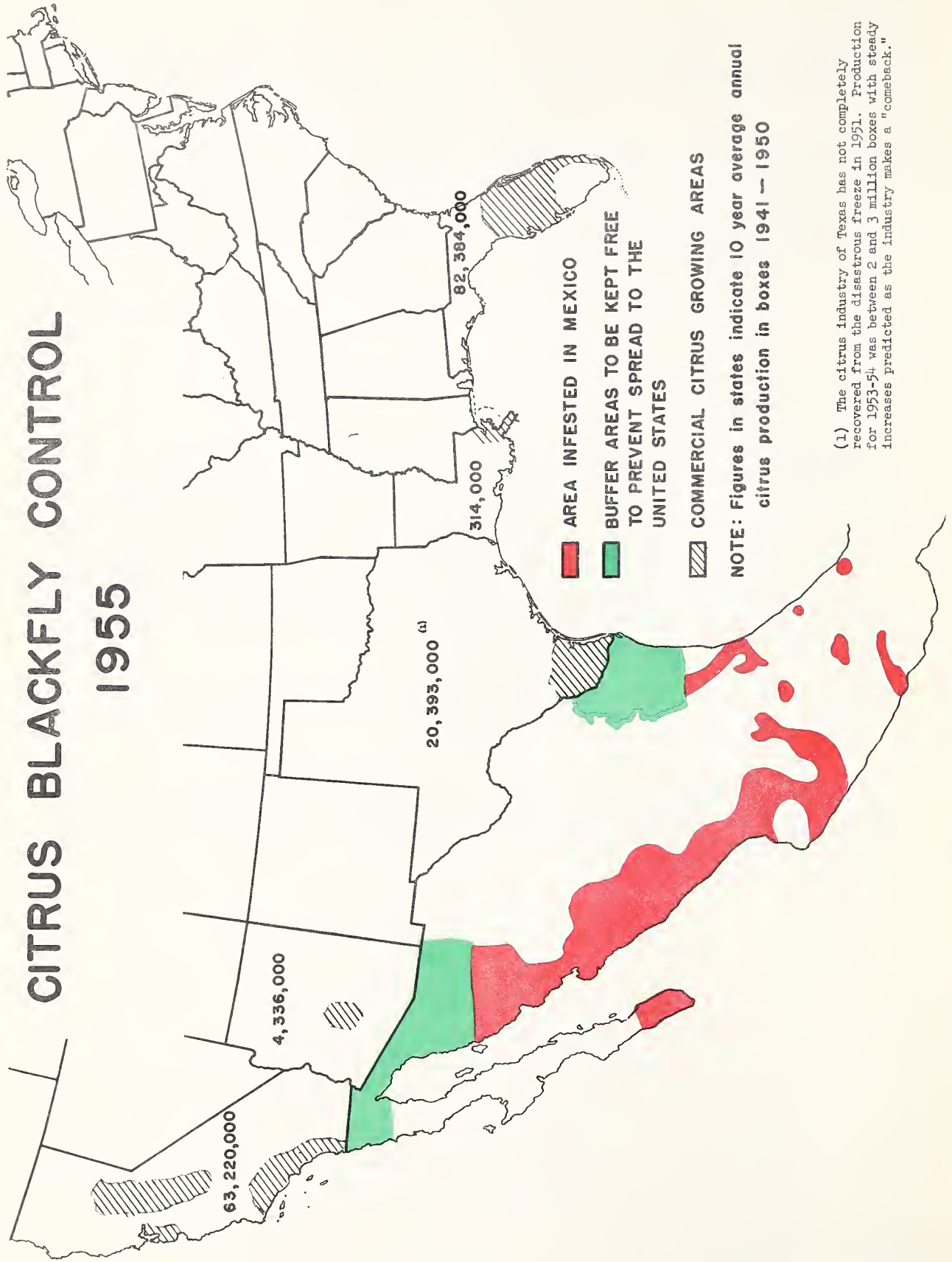
Potential for Accomplishment. Spreading decline has been known to exist in Florida for twenty years or more but it was not until 1953 that the burrowing nematode was recognized as the probable cause of this condition. The State of Florida has initiated a program which provides for the destruction of infested trees and the fumigation of the soil preparatory to replanting. Infested nurseries are under regulation and only certified stock will be available for replanting. The burrowing nematode has been discovered in California on plants imported from Hawaii but has not as yet been detected in association with citrus.

Research Support. Both the Florida Experiment Station and the Agricultural Research Service have intensified effort to improve methods of survey and methods of control.

Additional or Modified Legislation. Provision has been made for Federal participation in this program with funds appropriated under the Joint Resolution of 1938 for the control of incipient or emergency outbreaks of insect pests or plant diseases.

CITRUS BLACKFLY CONTROL

1955



(1) The citrus industry of Texas has not completely recovered from the disastrous freeze in 1951. Production for 1953-54 was between 2 and 3 million boxes with steady increases predicted as the industry makes a "comeback."

CITRUS BLACKFLY

Probably native to India. Introduced into Jamaica about 1910 and found in Mexico in 1935. Occasionally enters this country. Serious pest of citrus and other fruits.

Objectives. The objective of the citrus blackfly program is to prevent its spread from infested areas in Mexico into the United States. This is being accomplished by cooperating with the Mexican Government in suppression of the citrus blackfly in areas near the international boundary. The eradication of incipient infestations in Mexico is providing valuable information for use in the United States, if ever needed.

Needs. A better chemical for eradication is the most urgent need of this program. A method of disinfecting fruit offered for shipment to protect destination areas is also needed.

Effectiveness. Two infestations in Matamoras at the international border have been successfully eradicated. Two new infestations near Brownsville, Texas, are now receiving treatment.

Potential for Accomplishment. Important factors in keeping this pest out of the United States are recognition by the Mexicans of the seriousness of the problem, their interest in the development of biological control methods to keep populations suppressed, their willingness to cooperate by eradicating infestations occurring from time to time near the international border, and the effectiveness of the foreign plant quarantine program.

Research Support. The Fruit Insects Section of the Entomology Research Branch, Agricultural Research Service, maintains a laboratory in Mexico which continues to devote a portion of its time to research on problems affecting citrus blackfly. Particular attention is being given to the development of effective biological control methods. A more satisfactory chemical control is a definite requirement. This will be particularly true should an extensive area become infested near the border or in the United States.

Additional or Modified Legislation. Additional or modified legislation is not needed at this time.

EUROPEAN CHAFER CONTROL 1955

The European chafer is a destructive root feeder in its larval stages. It damages and often destroys pasture, turf, hay crops, alfalfa, small grains, and nursery stock. Where populations are heavy, complete grass and crop losses result. Its peculiar life history and habits make it an extremely difficult pest to detect and suppress. During 1954 new infestations were found in Western New York and in Eastern West Virginia, and this insect now threatens to spread to other parts of the country.

AREAS OF
KNOWN
INFESTATION

1-21-55

EUROPEAN CHAFER

Introduced from France prior to 1940. Now established in New York, Connecticut, and West Virginia. Root feeder on grain, legumes, grasses.

Objectives. The objective of this program is to assist states in suppressing outlying infestations of the European chafer, and to carry out such measures as may be necessary to prevent further spread. Until this year, Federal aid has been limited to helping the State of New York incidental to other work of the Branch. As a result of several new finds outside the generally-infested area during the summer of 1954 and 1955, Federal funds were made available for the first time to assist in organized control operations.

Needs. The need for better survey methods is urgent. It is extremely difficult to locate larval or adult infestations of the European chafer. Traps have been developed which are partially effective. More efficient larval or adult control procedures are also needed. An intensive research program should support regulatory and control work for an indefinite period.

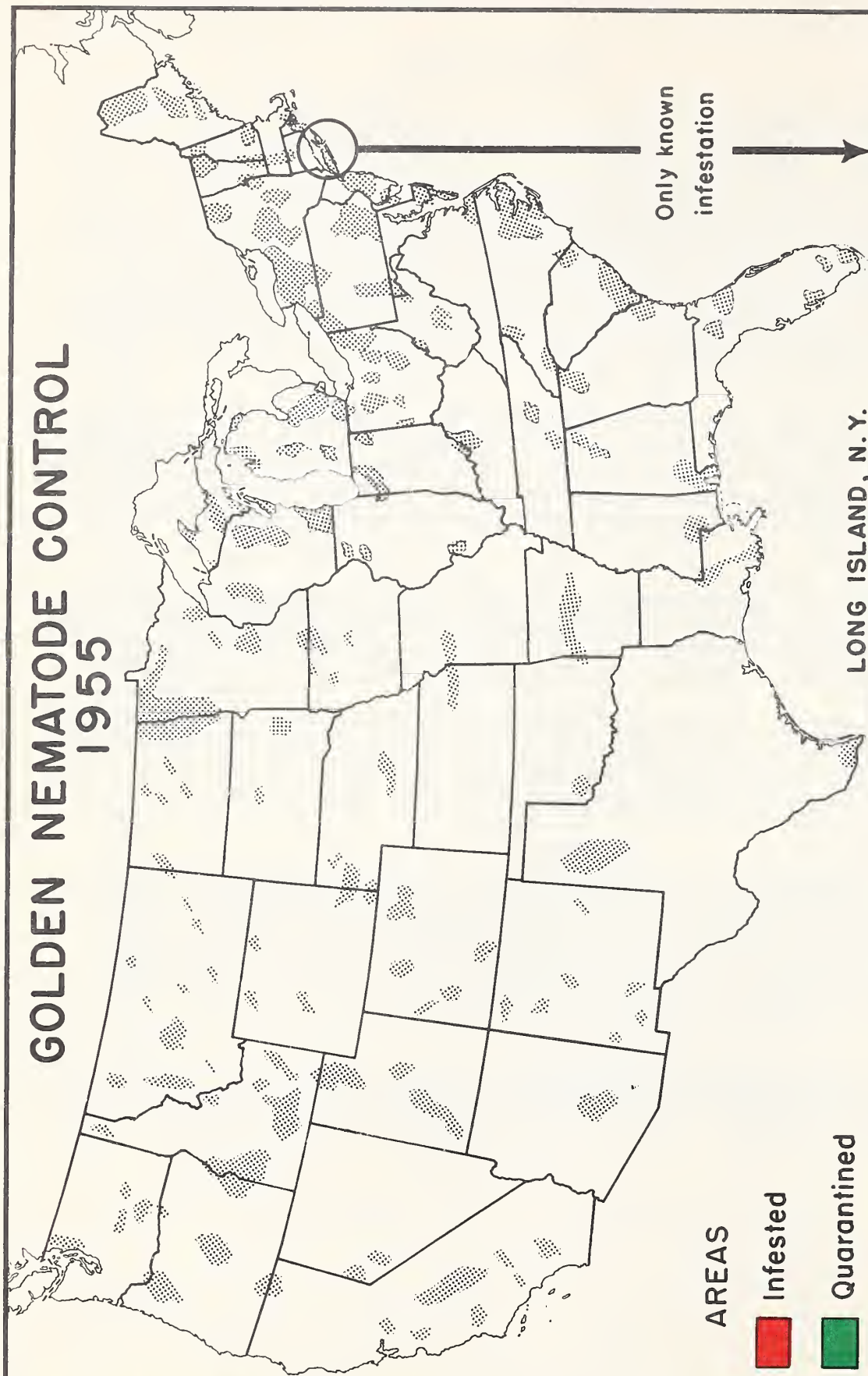
Potential for Accomplishment. It is believed that considerable progress is being made through recent developments in the soil insecticide field. Such treatments, coupled with effective soil fumigation, will permit the certification of nursery stock originating within an infested area.

Effectiveness. As the new infestations of the European chafer apparently resulted from early shipments of infested nursery stock, there is reason to believe that an aggressive regulatory program can be developed which will be effective in preventing long-distance spread from known points of infestation.

Research Support. The European chafer problem is being studied by research agencies of the State of New York with whom Federal research personnel are cooperating. The Geneva Experiment Station and Cornell University are currently obtaining information that will be pertinent to an effective prevention-of-spread program. The lack of adequate survey procedure is well recognized and efforts are being made to develop efficient survey techniques.

Additional or Modified Legislation. A Federal quarantine was promulgated effective September 1, 1955, and involves parts of New York, Connecticut, and West Virginia. This is a further step in strengthening this program.

GOLDEN NEMATODE CONTROL 1955



* Commercial potato producing areas



GOLDEN NEMATODE

Introduced from northern Europe. Found on Long Island, New York, in 1941. Confined to 12,000 acres. Serious pest of potatoes.

Objectives. The main objective of the golden nematode control project is to confine infestation to the Long Island area while research develops procedures for disinfecting soil. This is accomplished by removing infested lands from potato and tomato production, assisting the State of New York in enforcing quarantine regulations, and conducting surveys throughout the potato producing areas of the United States to establish presence or absence of the organism.

Needs. A nematocide is urgently needed which will give complete control thus permitting cultivation of host crops on lands following treatment. There is need also for better methods of disinfecting products and containers that have been associated with infested soil.

Potential for Accomplishment. An eradication program will be possible when chemicals are available which will give 100 percent control in the limited number of acres infested. State, local, and private cooperation speaks well for the future of the program.

Effectiveness. Retiring lands from host production and the enforcement of the golden nematode quarantine have effectively retarded the spread of the pest. This is evidenced by the fact that despite intensive surveys throughout the United States it has not been found elsewhere than on Long Island. Since its discovery in 1941, it has been found on only 12,000 acres.

Research Support. The New York State College of Agriculture and the Nematology Section of the Horticultural Crops Research Branch, Agricultural Research Service, are conducting research on this pest to determine biological and chemical control possibilities. Studies are also being conducted relative to the handling of potatoes and other commodities, including containers to prevent spread from infested lands. The research agencies concerned have worked closely with the control project in making available their findings in order that the control program could be adjusted accordingly.

Additional or Modified Legislation. The quarantine under which the program is cooperatively conducted is a State of New York quarantine. Federal participation in the program is authorized by the Golden Nematode Act of 1952. There appears to be no immediate need for further legislation or a modification of it.

GRASSHOPPERS AND MORMON CRICKETS

Grasshoppers are native and generally distributed over United States but most serious west of Mississippi River. Mormon crickets in western United States. Both are general feeders.

Objectives. This program provides general leadership, technical direction, and coordination for cooperative control efforts designed to prevent losses to cultivated crops and native grasses by destructive outbreaks of grasshoppers and Mormon crickets which occur annually in the arid and semi-arid western states. The principal functions are (1) surveys to inform states, other agencies and the public of areas where outbreaks are likely to occur, (2) participation in control operations on low-value public and private range lands where serious infestations threaten subsequent larger control expenditures if not promptly suppressed, and (3) providing technical assistance in developing area-wide utilization of more effective control techniques in areas where grazing lands and crop lands are intermingled.

Needs. The location, extent, and intensity of grasshopper outbreaks vary from year to year. There is urgent need for more prompt action on the part of certain states, counties, and organized groups of ranchers in suppressing incipient infestations before costly control programs develop. Some states have solved this problem by establishing emergency or contingency funds which may be drawn upon to assist organized groups of ranchers when surveys indicate area-wide control on range lands is necessary.

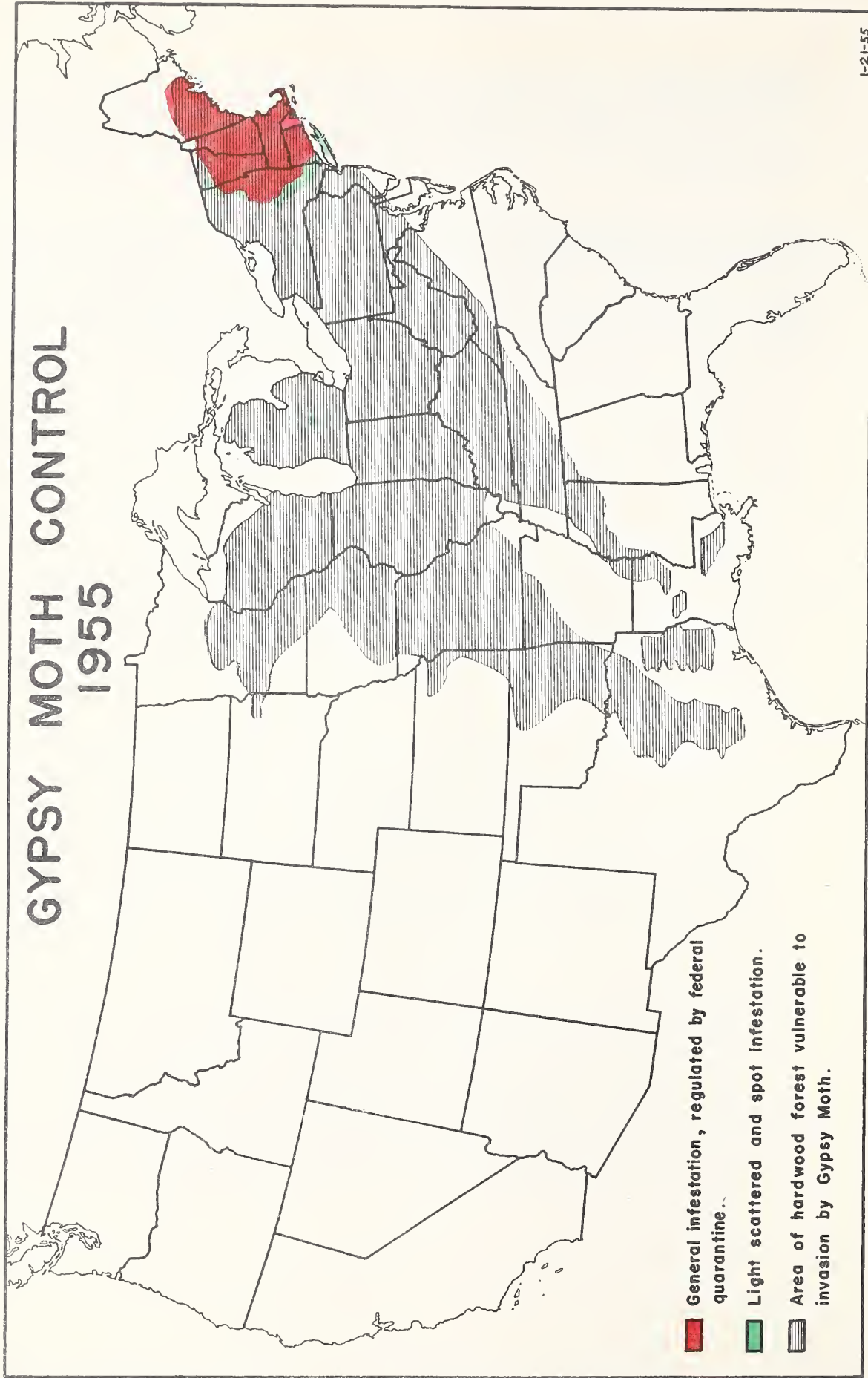
Potential for Accomplishment. While eradication of grasshoppers and Mormon crickets is impractical, at no time in history has the outlook for preventing major outbreaks and migrations of these pests been better. Improved survey techniques are providing timely information relative to the effects of weather and other ecological factors upon population developments. Improved insecticides are available that are extremely effective and can be applied in minute quantities as sprays, dusts, or bait formulations. Aircraft and modern ground equipment permit the treatment of vast acreages in a short period of time at very nominal costs.

Effectiveness. The effectiveness of this program has been demonstrated in recent years. There are indications that the control procedures in current use will keep large areas relatively free from destructive grasshopper populations for periods up to five years or more. Populations of grasshoppers have not built up to economic proportions on over 400,000 acres treated in Wyoming during 1951. Experience has indicated that present Mormon cricket control procedures have been very successful in checking the cyclical build-ups of these damaging pests.

Research Support. The Entomology Research Branch is responsible for grasshopper and Mormon cricket research. Much of the work is conducted at its field stations at Bozeman, Montana, and Tempe, Arizona. Research on grasshoppers also is carried on at various experiment stations in the western states.

Additional or Modified Legislation. It is believed that the enactment of state legislation authorizing adequate financial participation in cooperative control programs would be of assistance to several states concerned with this program. Authority for the establishment of pest control districts would likewise facilitate control operations in certain states. Federal legislation appears to be adequate.

GYPSY MOTH CONTROL 1955



1-21-55

GYPSY MOTH

Introduced into Massachusetts from Europe about 1869. A serious pest of deciduous trees and shrubs. Evergreens are attacked under outbreak conditions. Established in New England and eastern New York.

Objectives. The objective of the cooperative gypsy moth program is to prevent further spread of the pest and to prevent damaging outbreaks within the generally infested area. This is being accomplished by the enforcement of Federal and state quarantines, surveys to promptly detect new areas of infestation, the application of sprays to eradicate outlying or peripheral infestations, and by providing technical assistance to states and local agencies within the generally infested area.

Needs. Populations sometimes have been so heavy that it has been impossible to keep abreast of many spot infestations occurring along the western periphery of the area. It is within this area, the so-called barrier zone, that complete freedom from gypsy moth infestation should be maintained to prevent further natural spread to the west.

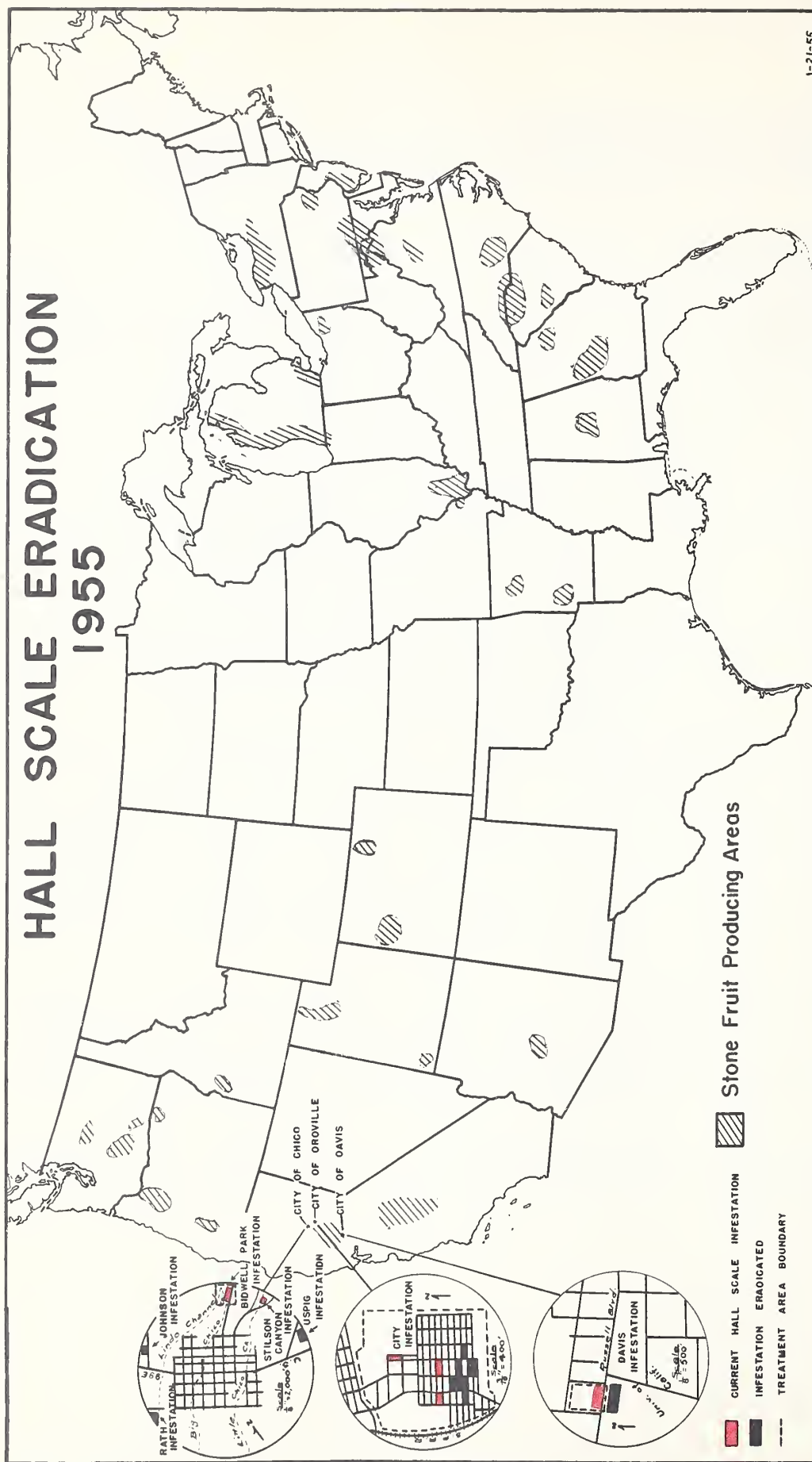
Potential for Accomplishment. The gypsy moth can be eradicated from any specific location in this country. With adequate support this insect can be confined within its present area and eradicated from all outlying locations where infestations appear from time to time.

Effectiveness. That the gypsy moth control program is effective is indicated by the fact that it has been possible to confine it to a limited area for more than 85 years. Even before the new insecticides became available, a major outlying infestation in New Jersey was completely eradicated and numerous spot infestations that have occurred at many points were successfully treated. More recently, the gypsy moth has been eliminated from extremely rugged terrain in Pennsylvania. There is every reason to believe that the newly discovered infestation in Michigan can be promptly eradicated.

Research Support. Prior to the reorganization of the Department the Forest Insect Investigations Laboratory at New Haven, Connecticut, which is now a part of the Forest Service, was assigned the responsibility for research work in support of this program. Present knowledge appears to be adequate to meet the objectives of the program.

Additional or Modified Legislation. At the present time there appears to be no need for additional legislation or modification of that currently in force.

HALL SCALE ERADICATION 1955



HALL SCALE

First found at Chico, California, in 1934. Confined to three areas in California. Attacks a wide range of stone fruits.

Objectives. The objective of the program is to eradicate the Hall scale from all areas of infestation in the United States. This is being accomplished by the enforcement of state regulations governing the movement of host materials, surveys to promptly detect new locations of infestation, and the fumigation or removal of host trees within areas of infestation.

Needs. Combined state and Federal facilities are adequate to meet the problem as known at the present time. A final difficulty remains in assuring that all infested host trees have been located.

Potential for Accomplishment. Unless new infestations are discovered, all host plants requiring treatment will have been fumigated one or more times by the spring of 1957. Surveys to assure success of eradication would be required for a period of approximately 3 years subsequent to the last finding of infestation.

Effectiveness. Although surveys for this pest are most difficult, repeated inspections have failed to disclose widespread infestation. The Davis and Oroville infestations appear to have been eradicated. Infestations in the Chico area have been progressively reduced. Available fumigation and host removal methods are completely effective in eliminating established infestations. An extensive survey program at locations where hosts of this pest were shipped before restrictions were imposed indicates that the Hall scale does not exist outside of the known areas of infestation.

Research Support. There is no established research undertaking associated with the Hall scale eradication program. Inasmuch as this insect was new to the western hemisphere and thought to be confined to a limited area in California at the time of the initial finding in 1934, efforts have been directed to actual eradication. Various State and Federal research workers have contributed research assistance on specific problems encountered from time to time by the Hall Scale Eradication Project.

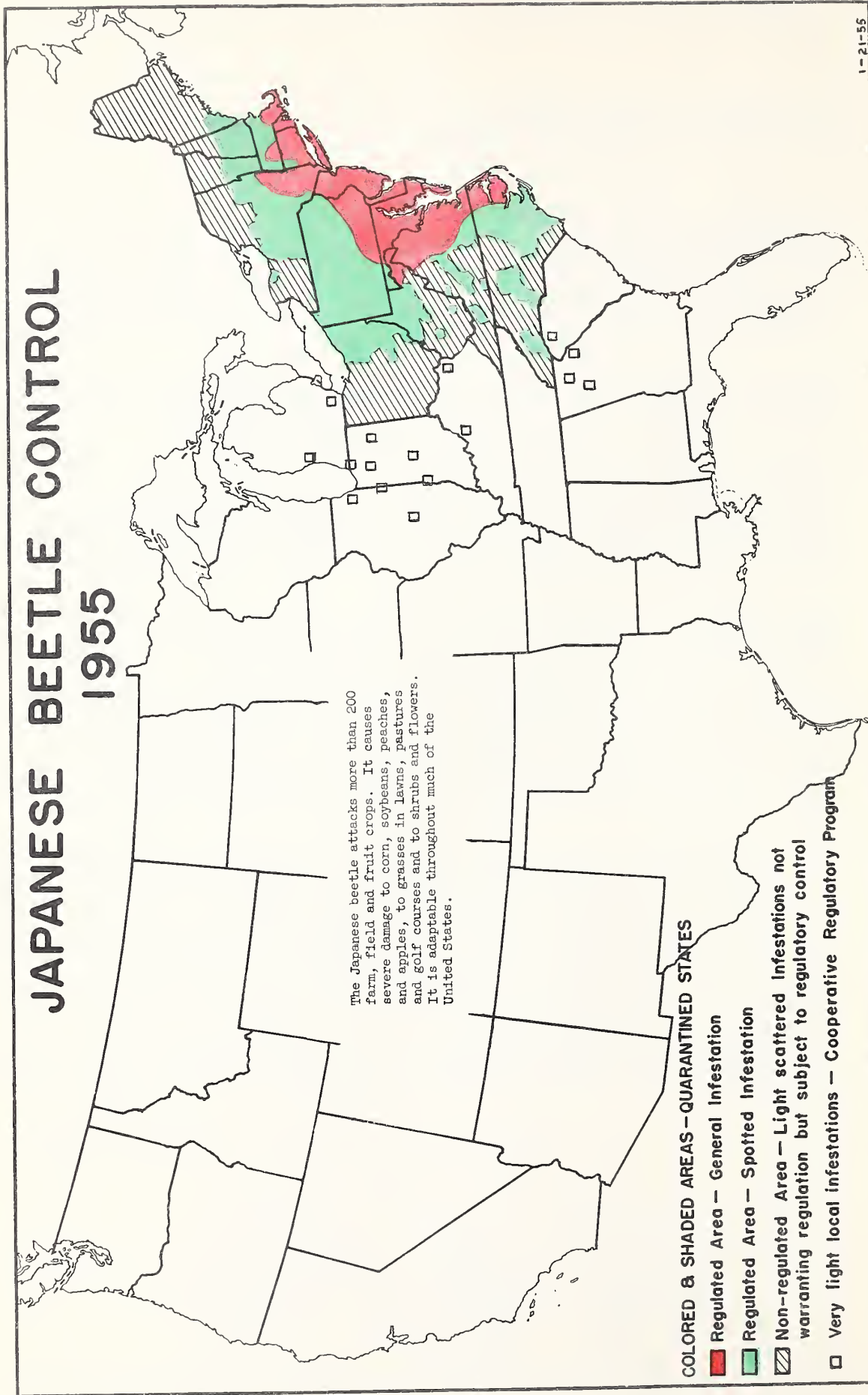
Additional or Modified Legislation. At the present time there appears to be no need for additional legislation or the modification of that currently in force.

JAPANESE BEETLE CONTROL 1955

The Japanese beetle attacks more than 200 farm, field and fruit crops. It causes severe damage to corn, soybeans, peaches, and apples, to grasses in lawns, pastures and golf courses and to shrubs and flowers. It is adaptable throughout much of the United States.

COLORED & SHADED AREAS - QUARANTINED STATES

- Regulated Area - General Infestation
- Regulated Area - Spotted Infestation
- Non-regulated Area - Light scattered infestations not warranting regulation but subject to regulatory control
- Very light local infestations - Cooperative Regulatory Program



JAPANESE BEETLE

A native of the Orient. Probably introduced into United States about 1916. Attacks wide range of crops including ornamentals. Now infests about six percent of the area of the United States.

Objectives. The objective of the cooperative Japanese beetle program is to retard its spread from the areas of general infestation. This is being accomplished by the enforcement of Federal and state quarantine regulations governing the movement of commodities capable of transporting the Japanese beetle into noninfested areas, surveys to promptly detect and delimit new areas of infestation, and the prompt suppression of infestations occurring outside of the generally infested area.

Needs. The expanding needs of the regulatory work have made it impossible to provide for adequate surveys to determine over-all distribution of the pest. More satisfactory means of preventing beetles from entering aircraft on passengers or cargo or better methods of disinfecting are greatly needed in the light of increased passenger-cargo movement by aircraft.

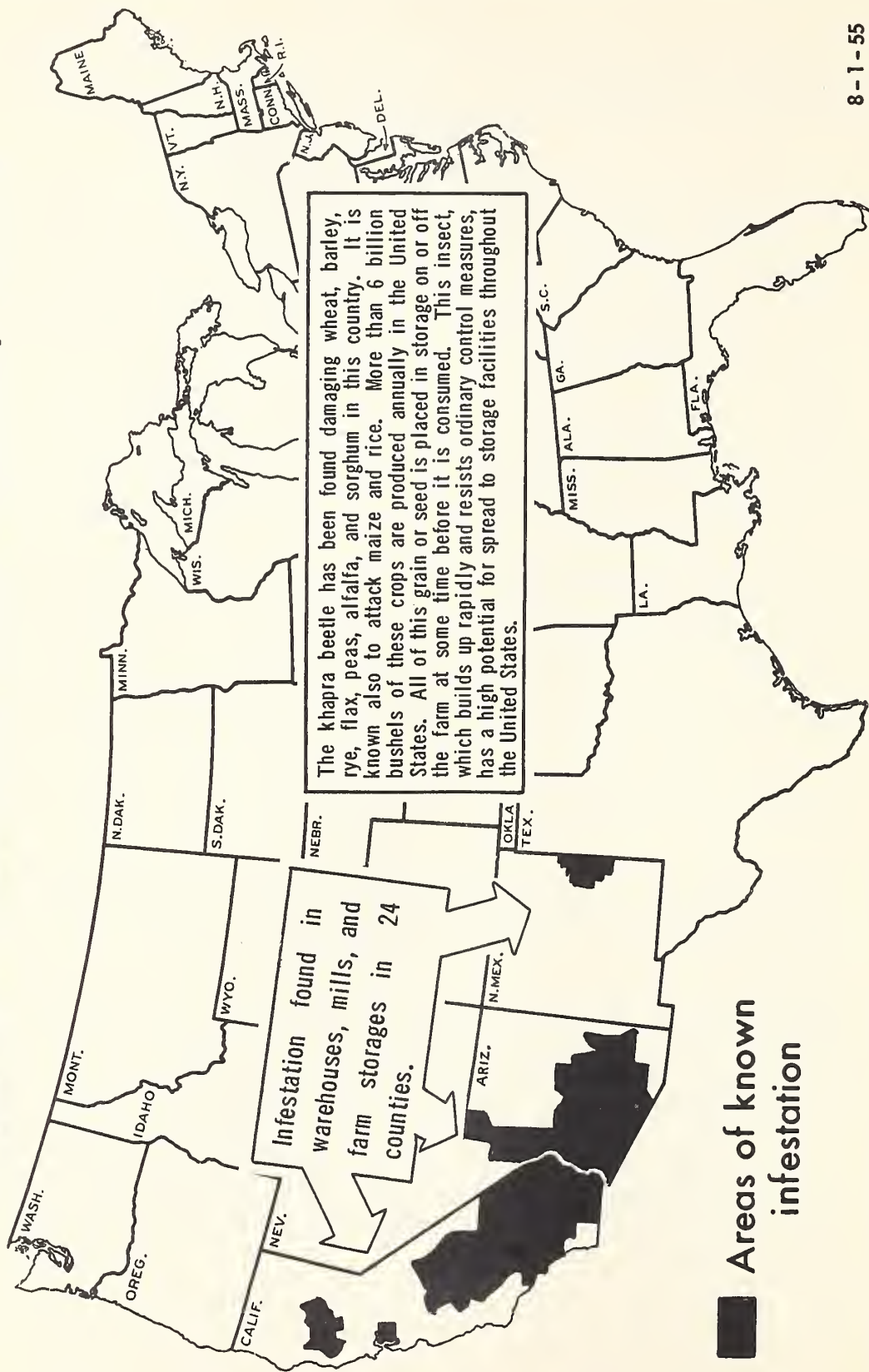
Potential for Accomplishment. Recent research indicated that some of the newer insecticides, notably dieldrin, when applied to the surface of the ground or incorporated in it to a depth of about 3 inches have been remarkably effective in controlling the Japanese beetle. These new developments may fill the need for a suitable, inexpensive means of suppressing larval populations at outlying points. These chemicals may provide more satisfactory treatments for certifying some commodities which must move in soil or other planting media harboring Japanese beetle. Research and improved control methods give hope that continued spread may be drastically retarded or prevented.

Effectiveness. Since its first discovery in 1916 the Japanese beetle is now in only about six percent of the land area of this country. New materials and procedures have made it possible to successfully suppress infestations.

Research Support. Research support is provided by the Federal Japanese Beetle Laboratory located at Moorestown, New Jersey. While these activities have been reduced somewhat, this laboratory provides regulatory officials with new or improved treatments for the certification of commodities. The Project is indirectly assisted by Federal research on other soil-infesting insects, notably the white-fringed beetle, and by state agencies.

Additional or Modified Legislation. At the present time there appears to be no need for additional legislation or the modification of that currently in force.

KHAPRA BEETLE CONTROL, 1955



KHAPRA BEETLE

A pest of grain and other stored products, it is believed to be a native of India and Malaya. It was found in California in 1946 and has spread to New Mexico and Arizona.

Objectives. The objectives of the cooperative khapra beetle control and regulatory program are to prevent the spread of this pest to other parts of the United States, and to eradicate it if possible. This is being accomplished by the enforcement of State and Federal quarantines, by surveys and inspections to promptly detect new sources of infestation, by the development and application of sanitation, fumigation, and other treatment methods, and by furnishing technical assistance to States, industries, and individuals concerned.

Needs. Efforts should be directed toward improved survey methods; and improved fumigation procedures.

Potential for Accomplishment. Preliminary surveys conducted by State and Federal workers indicate that this pest may not be widespread throughout grain storage facilities of the country. With a limited distribution, with adequate methods of disinfecting commodities, and with the insects' limited natural migration, it appears that the khapra beetle could be contained. Improved fumigation procedures now undergoing trial indicate the possibility of eradicating infested premises. Infested warehouses in Mexico present a serious threat to eradication efforts.

Effectiveness. Regulatory, sanitation, and fumigation measures have contributed to the suppression and eradication of specific infestations, as well as to retardation of spread.

Research Support. A comprehensive research program has been initiated to develop treatments for infested commodities, and for storage facilities that are involved. The States of California and Arizona, counties, and the grain industry are cooperating in this work. Federal participation in research efforts is directed by the Stored Product Insects Section, Agricultural Marketing Service, U. S. Department of Agriculture.

Additional or Modified Legislation. If the current program of eradication proves successful, existing legislation is adequate.

MEXICAN FRUITFLY CONTROL
1955

63,220,000
4,336,000
20,393,000 (1)
314,000
82,384,000

AREA INFESTED IN MEXICO
AREA UNDER REGULATION IN U.S.
COMMERCIAL CITRUS GROWING AREAS

NOTE: Figures in states indicate 10 year average annual

AREA UNDER REGULATION IN U.S.

 **COMMERCIAL CITRUS GROWING AREAS**

NOTE: Figures in states indicate 10 year average annual citrus production in boxes 1941 — 1950

55-12-1

MEXICAN FRUIT FLY

Native to northern Mexico. Reinfests citrus areas of lower Rio Grande Valley annually. Recently found northwest Mexico near California border.

Objectives. The objective of this program is to prevent spread of the Mexican fruit fly from limited infested areas in the lower Rio Grande area in Texas to other fruit growing areas in this country. These objectives are attained through a regulatory program requiring treating infested fruit to free it of infestation before leaving the regulated area in Texas; cooperating with the Mexican Government to prevent the establishment of Mexican fruit fly in that country along portions of the border now free from the insect; eradicating incipient infestation in Baja California, Mexico, and cooperating with the Republic of Mexico in the enforcement of regulations designed to prevent infested fruit from reaching western border areas of that country.

Needs. A more satisfactory treatment of products to certify them for transport to uninfested areas should be developed. A more effective insecticide continues to be a pressing requirement to insure eradication of infestations of this insect.

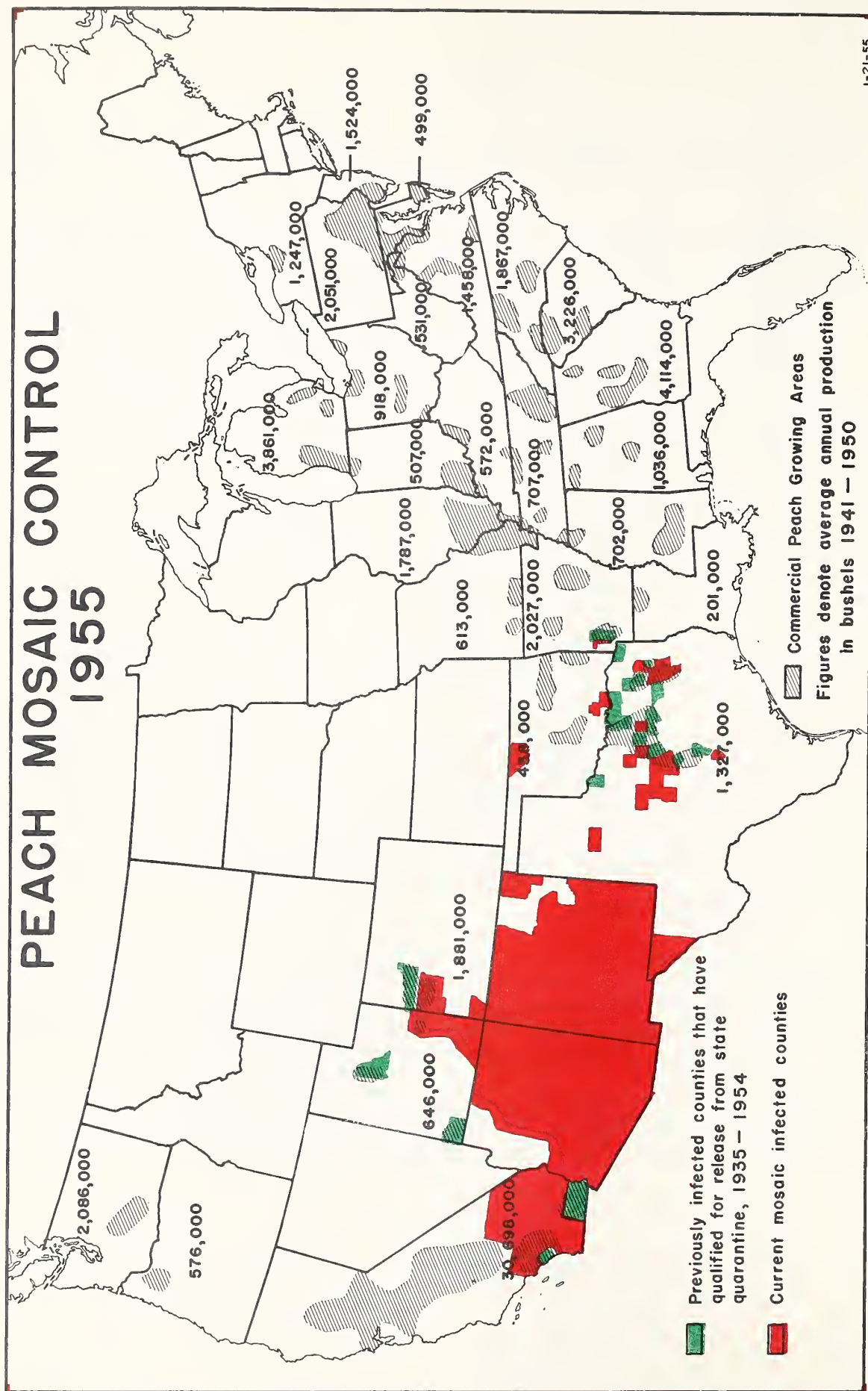
Effectiveness. Although millions of boxes of fruit have been shipped from the infested area in Texas under certification, no infestations have been found in other fruit areas of the United States.

Potential for Accomplishment. So long as infestation recurs annually in the citrus groves of Texas, it will be necessary to maintain the regulatory program. Eradication of the fruit fly from the Texas area is not feasible because reinfestation occurs annually through flight of the adult from native host plants covering several million acres in northeast Mexico. Eradication of this pest from border areas in the far West is possible if recurrence of infestation can be prevented by a strong cooperative program with Mexico.

Research Support. The Fruit Insects Section of the Entomology Research Branch, Agricultural Research Service, through its laboratory in Mexico City has recently increased research on several phases of the Mexican fruit fly problem. State research agencies are cooperating in the problem. A new more effective spray formula was recently made available.

Additional or Modified Legislation. Recent authorization permitting the use of incipient funds in either Mexico or Canada appears to have provided the needed legislation required in the conduct of this program.

PEACH MOSAIC CONTROL 1955



PHONY PEACH AND PEACH MOSAIC DISEASES

Caused by a virus. Transmitted from tree to tree by insect vectors (a mite in the case of peach mosaic).

Objectives. The objective of this program is to prevent tree-to-tree, local, and long distance spread of the phony peach and peach mosaic diseases. This is accomplished by surveys to detect the presence of these diseases in orchards and nurseries, the enforcement of uniform state quarantines, and grower removal of infected trees.

Needs. The most important needs in protecting the peach industry are: (a) to determine habits and to classify the newly-discovered vector of peach mosaic, (b) to develop effective control measures against the vectors of phony peach and peach mosaic, and (c) to develop disease-resistant peach trees.

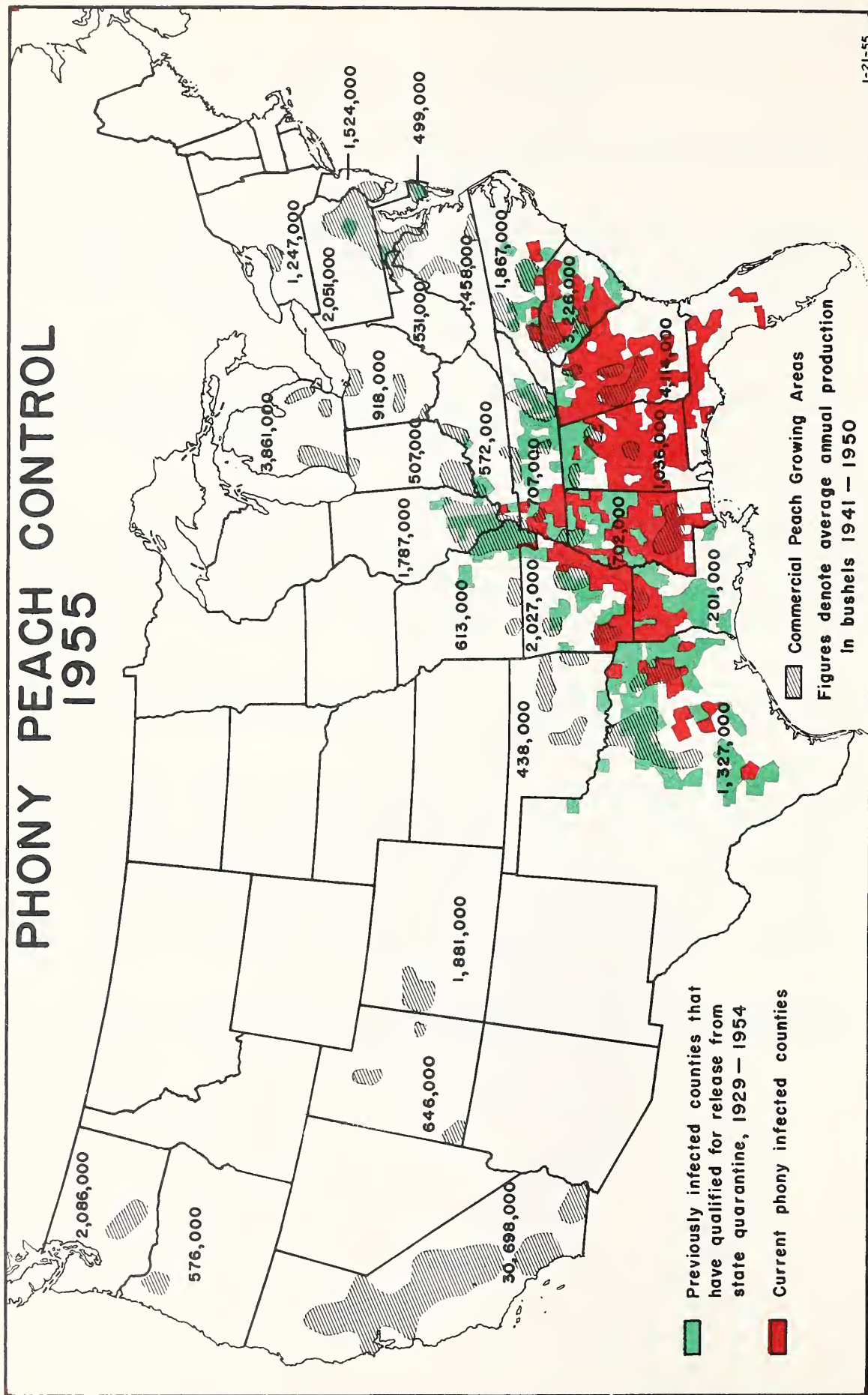
Effectiveness. There has been a reduction in incidence in areas where the disease occurs. Due to the quarantine the establishment of new centers of infection through the shipment of nursery stock has been prevented. With the eradication of wild plums, a symptomless carrier of phony disease, a greater reduction in the incidence of this disease may be expected.

Potential for Accomplishment. This is a holding program and will continue as such until resistant varieties of peach trees or improved control techniques are developed.

Research Support. Research on the control of the insect vectors of phony peach disease is being done by the Entomology Research Branch, Agricultural Research Service. Phytopathological studies of peach mosaic, and related viruses, have been carried on by the Horticultural Crops Research Branch, Agricultural Research Service. State research agencies in affected areas are cooperating. These studies have included testing tolerant or resistant varieties. Studies have also been in progress which resulted in discovery of a vector of peach mosaic.

Additional or Modified Legislation. There is no apparent need for any additional legislation or modification of current legislation.

PHONY PEACH CONTROL 1955



ECONOMIC INSECT SURVEY

Organized on the present basis in 1952. There are four survey areas established to facilitate reporting insect conditions.

Objectives. The object of the cooperative survey program is to keep abreast of insect pest conditions throughout the country in order that farmers and others may be apprised of pest abundance and take timely corrective action. Pests new to this country must be promptly detected, and the information made available in times of national emergency so that attempts at biological warfare in the entomological field can be counteracted. The objective of the program is being accomplished through the submission of insect abundance data obtained by voluntary and other workers to designated state officials who assemble and distribute it within their states through their own channels. Copies are furnished the Survey Section for inclusion in a national issuance.

Needs. One of the principal needs of the program is to strengthen existing survey methods and organizations so that more uniform coverage of economic insect conditions throughout the United States is assured. A need exists for more adequate formulae for determining losses due to insects. The development of methods to permit long-range forecasts is of primary concern and such predictions are constantly being requested.

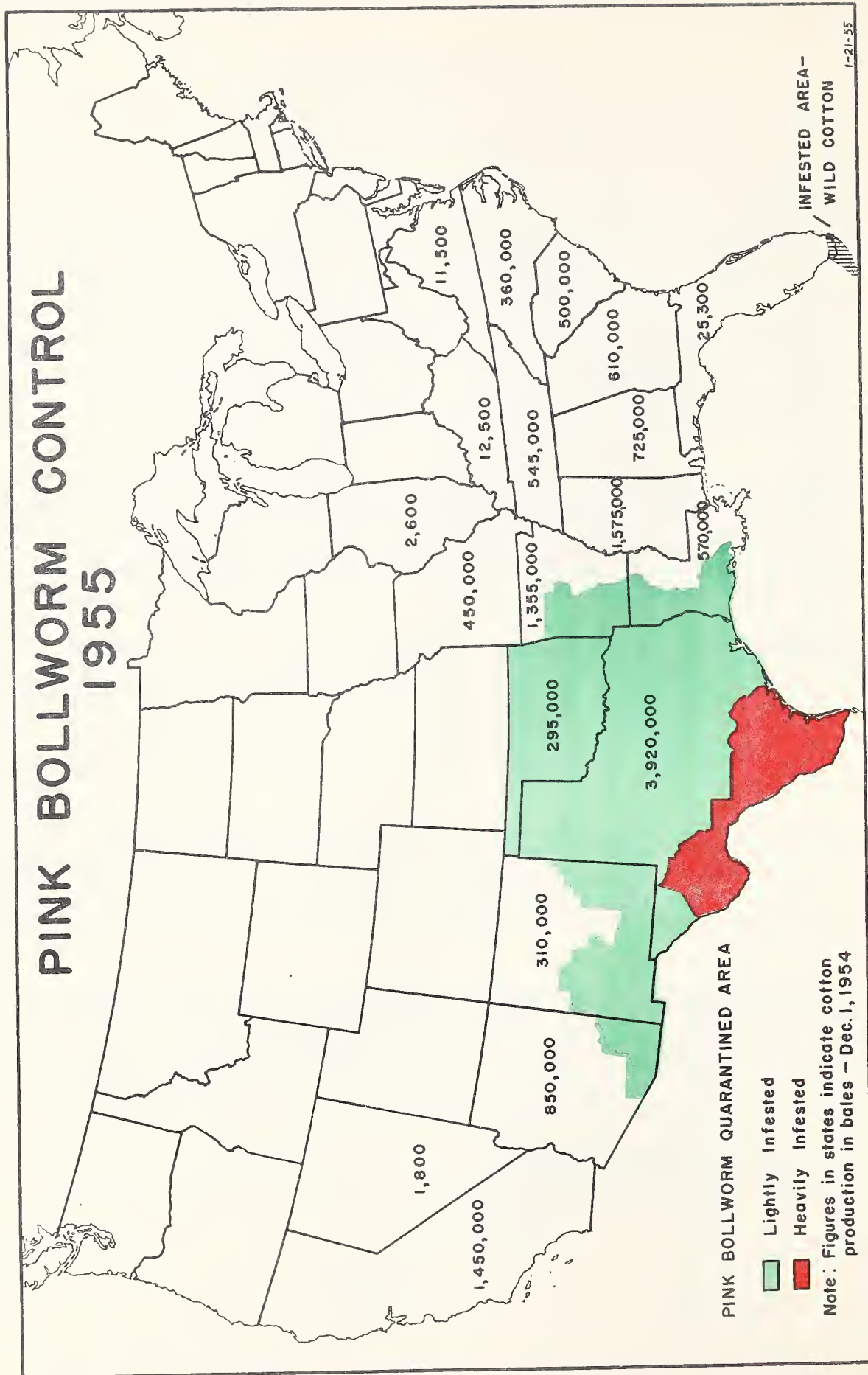
Potential for Accomplishment. The possibilities for the ultimate accomplishment of the objective of the program is very encouraging. Voluntary cooperation being received from state and other agencies is excellent and, in addition, 20 states have entered cooperative agreements for jointly financing a paid program. More agencies are becoming interested in the development of better survey methods and the need for more accurate loss figures.

Effectiveness. The cooperative program makes it possible to keep currently advised on insect conditions as they develop and it is now possible to give indications of possible expected infestations in the case of some insects. Through this network of observers it is possible to give prompt attention to surveys on new insects of potential economic seriousness as such situations arise.

Research Support. It is largely through Federal and state research agencies that the existing survey and loss estimate methods have evolved. Various research sections in the Entomology Research Branch of the Agricultural Research Service have projects directed to the needs of the Economic Insect Survey Section. The Insect Identification and Parasite Introduction Section is depended upon for identification services.

Additional or Modified Legislation. It may be desirable to amend the Department of Agriculture Organic Act of 1944 to include this work.

PINK BOLLWORM CONTROL 1955



PINK BOLLWORM

Introduced into Mexico about 1911. First found in United States in 1917, now infests to some degree about one-third of cotton belt. Severe infestations have been limited to a few counties in the lower Rio Grande Valley.

Objectives. The objective of the pink bollworm control program is to prevent its spread into new areas. This is being accomplished by the enforcement of quarantine regulations coupled with suppression of infestations within infested areas from which natural spread may occur; eradication of outlying infestation not subject to immediate reinfestation; and the eradication of wild cotton plants in Florida to prevent spread of the pink bollworm into southeastern cotton producing states.

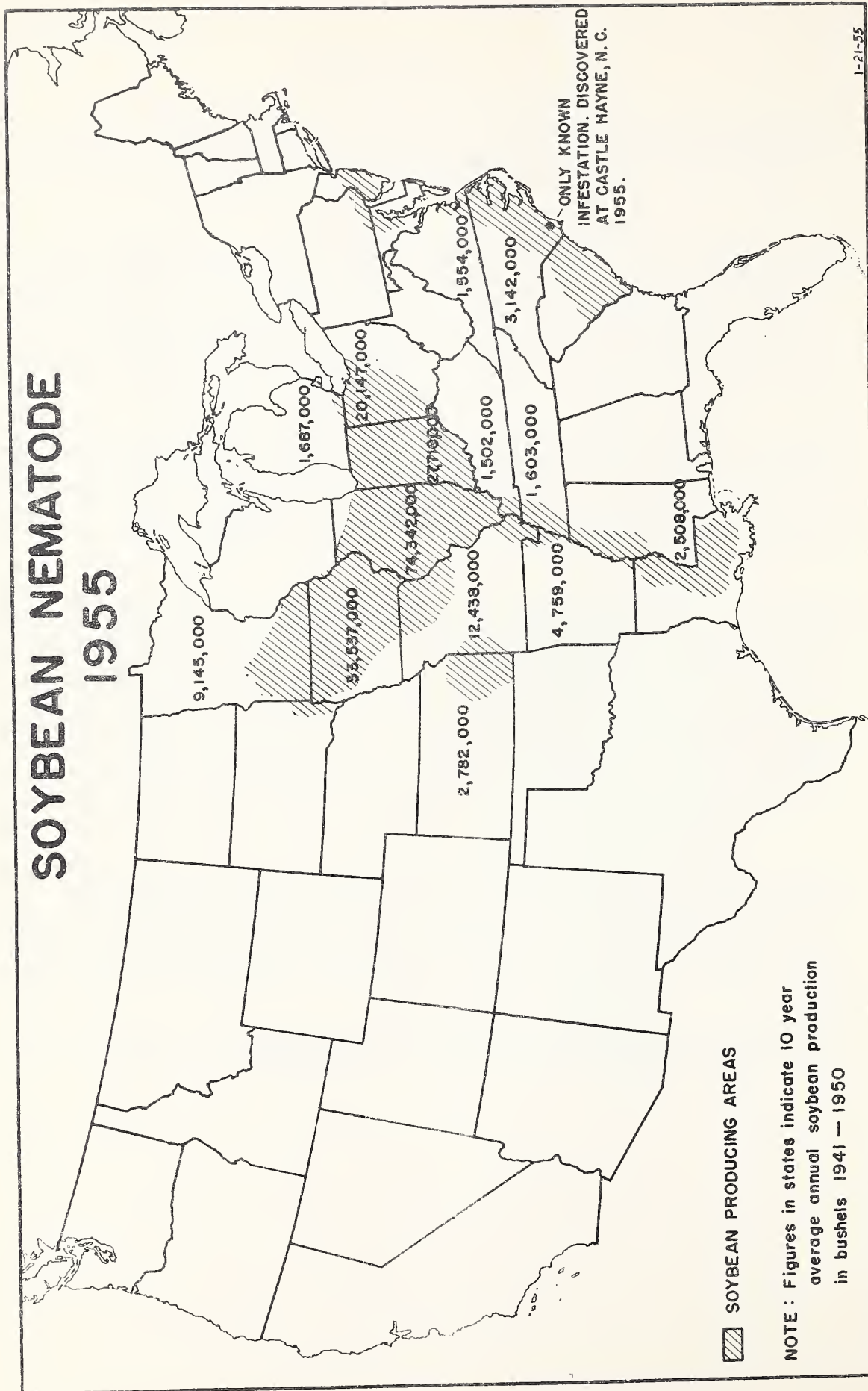
Needs. Although means are available for destroying great numbers of pink bollworms under favorable conditions before they enter hibernation, more satisfactory methods are needed to increase the destruction of potential over-wintering larvae. A more effective insecticide is needed for application to the growing cotton plants to prevent damage to the crop and build-up of infestation.

Potential for Accomplishment and Effectiveness. Prevention of spread is becoming increasingly difficult as the infested area increases in size. However, cultural methods of control are sufficient to maintain low level populations over large portions of the infested area. Long distance spread of pink bollworm is largely prevented by regulatory measures. Weather conditions which are conducive to windspread at times when adult moths are prevalent are responsible for substantial expansion of the infested area. During the 38 years of its presence in this country substantial damage attributable to the pink bollworm has been recorded in only one year.

Research Support. The Entomology Research Branch of the Agricultural Research Service, in cooperation with affected states and industry is continuing the expanded research program to develop more effective cultural control measures for the destruction of the pink bollworm during processing of seed cotton and cottonseed, and better insecticides and methods of application.

Additional or Modified Legislation. It is believed the current legislation under which this program operates is adequate.

SOYBEAN NEMATODE 1955



SOYBEAN PRODUCING AREAS

NOTE: Figures in states indicate 10 year average annual soybean production in bushels 1941 — 1950

SOYBEAN NEMATODE

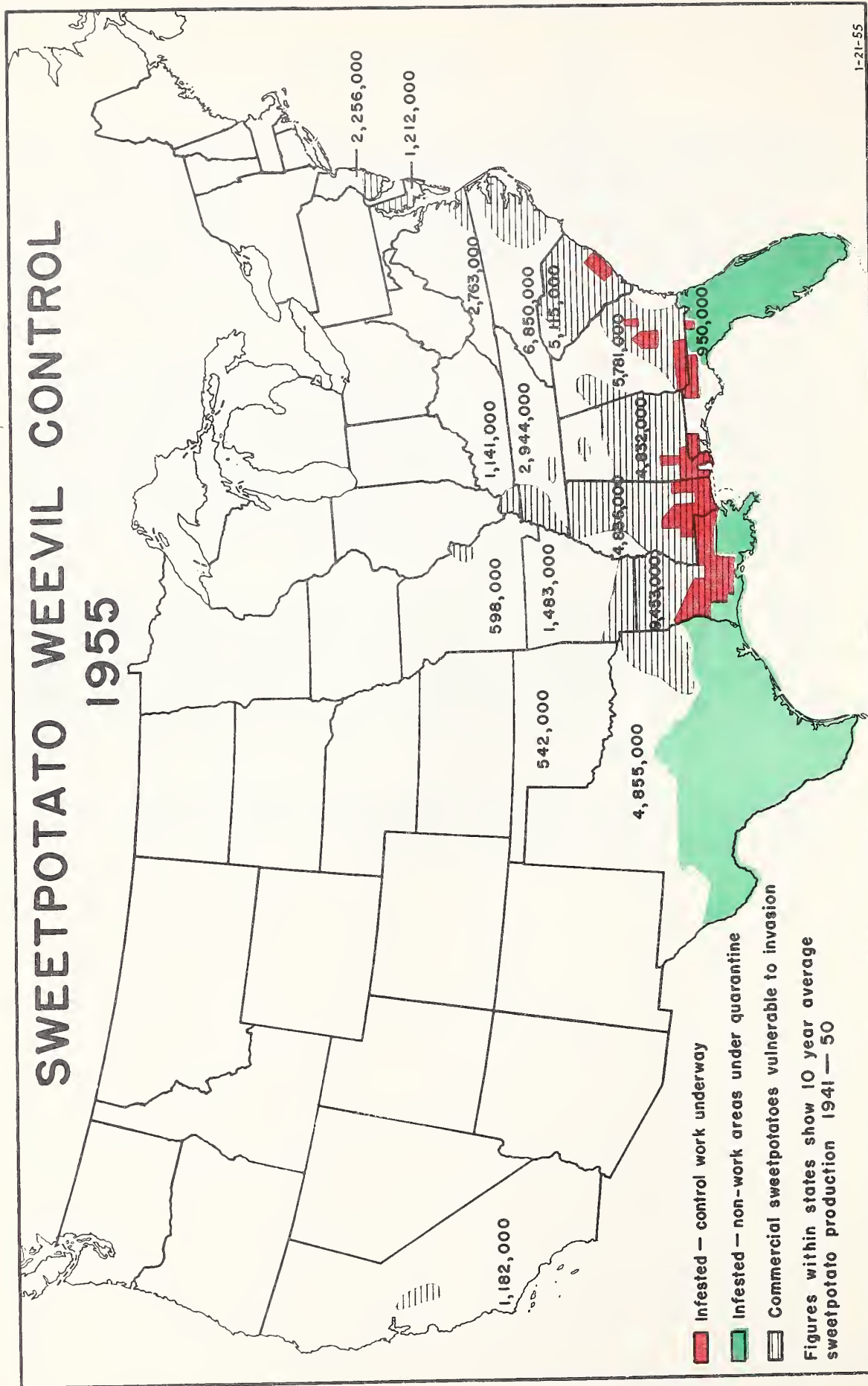
Serious damage to soybeans growing in the Castle Hayne area of southeastern North Carolina during August 1954 led to the discovery of a new pest in this country, the soybean nematode. Preliminary investigations indicate that it may be confined to approximately 6 fields totaling 200-300 acres within a radius of about 2 miles. The only previous records of this nematode are from Japan and China and little is known concerning the biology of the species. Members of the bean family are the only known hosts.

In view of the increasing importance of the cultivation of soybeans to the economy of this country, early consideration should be given to corrective action. In 1953 over 16 million acres of soybeans were grown in the United States, an increase of about 13 million acres since 1929. While 31 states commercially produce soybeans, the major production areas are located in the Corn Belt, the lower Mississippi Valley, and the mid-southern Atlantic Coast States. Soybeans are currently grown primarily for industrial and nutritional purposes with a very large percentage of the crop harvested for the beans.

Little is known concerning the seriousness of the soybean nematode except that it was causing serious injury in the fields in which it was discovered. This emphasizes the need for prompt consideration of an intensive research and survey program to determine what corrective action should be taken. Preliminary studies indicate that it behaves much the same way as the golden nematode, indicating that it may prove equally as difficult to control.

Legislation. In the event that other than emergency Federal action is necessary, it will be desirable to amend the Department of Agriculture Organic Act of 1944 to include this pest.

SWEETPOTATO WEEVIL CONTROL 1955



1-21-55

SWEETPOTATO WEEVIL

Probably introduced sometime before 1875. Now infests extensive areas of Texas and Florida where sweetpotatoes are grown mainly for home use. A constant threat to commercial production throughout the South.

Objectives. The objective of this program is to suppress weevil populations in areas of heavy commercial production and the prevention of the spread into noninfested areas. This is accomplished by systematic surveys to locate outlying infestations; establishment of non-potato growing areas to eradicate outlying infestations; and treatment of potatoes leaving infested areas.

Needs. More effective survey procedures to detect infestations of the sweetpotato weevil are urgently needed. The development of adequate procedures to protect growing plants from weevil attack to reduce infestation and prevent damage is important.

Effectiveness. The program has reduced the incidence of sweetpotato weevil in major commercial areas in the South and the enforcement of state quarantines due to the movement of infested tubers has been effective in preventing establishment of the pest in uninfested areas.


Potential for Accomplishment. The present program is providing sweetpotatoes reasonably free of infestation with the consequent small hazard of spread to uninfested areas. When effective insecticides are available to protect the growing plants, uninfested sweetpotato growing areas will be afforded substantially more protection.

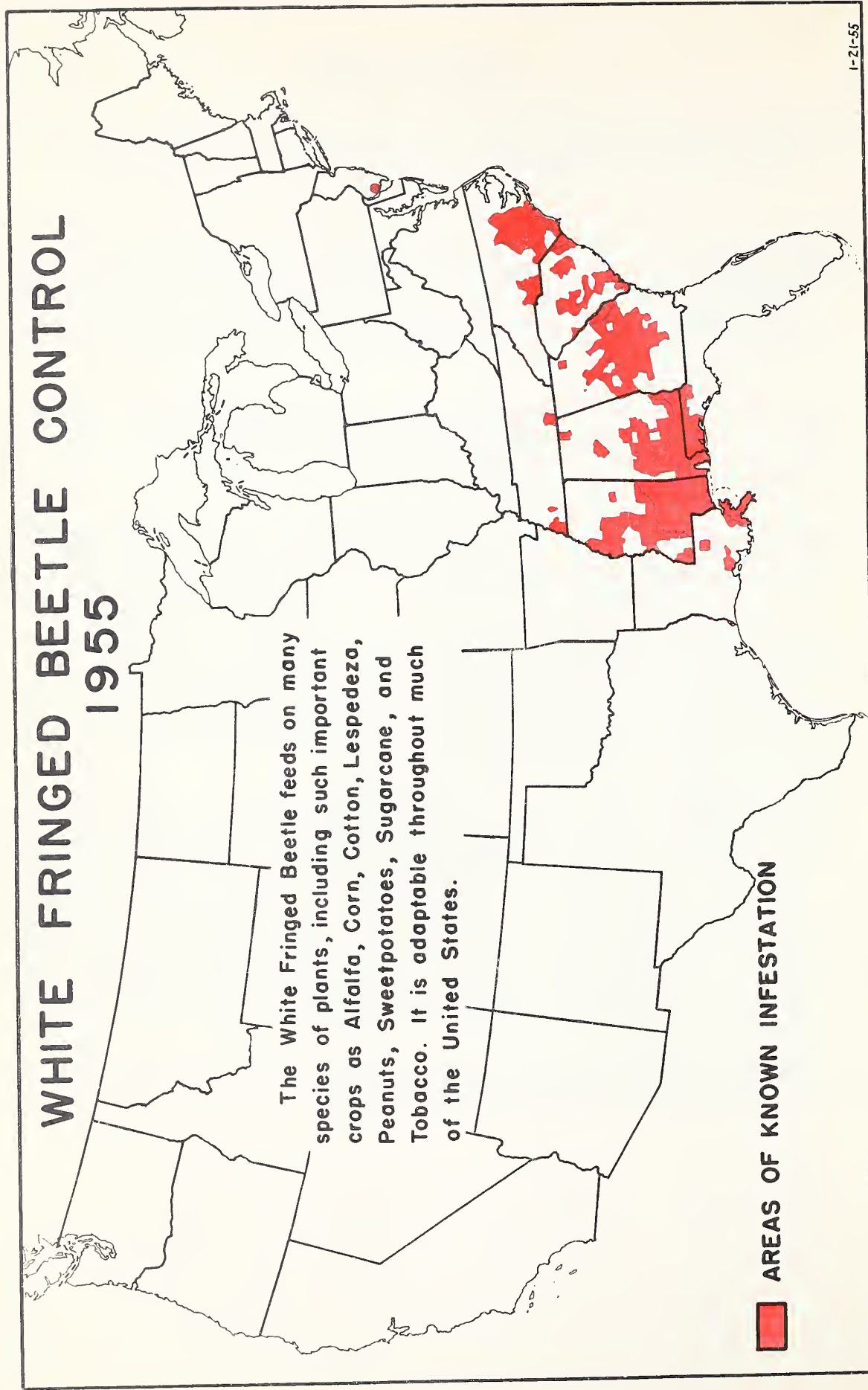
Research Support. The Truck Crop and Garden Insects Section of the Entomology Research Branch, Agricultural Research Service, conducts investigations in connection with sweetpotato weevil at a laboratory located in the heavily infested areas of Louisiana. State research agencies are cooperating. Recent tests with dieldrin indicate the effectiveness of that insecticide against the sweetpotato weevil. However, additional information is desired in the use of other insecticides, fumigation procedures, storage problems and sanitation on the farms to further safeguard noninfested areas. Much progress has been made in providing adequate tools with which to work during recent years.

Additional or Modified Legislation. Present legislation appears adequate to carry out the objectives of this program.

WHITE FRINGED BEETLE CONTROL 1955

The White Fringed Beetle feeds on many species of plants, including such important crops as Alfalfa, Corn, Cotton, Lespedeza, Peanuts, Sweetpotatoes, Sugarcane, and Tobacco. It is adaptable throughout much of the United States.

 AREAS OF KNOWN INFESTATION



WHITE-FRINGED BEETLE

Introduced from South America and first found in the United States in 1936. Now infests about 450,000 acres in eight southern states.

Objectives. The objective of the white-fringed beetle program is to prevent the spread into uninfested areas. This is being accomplished by suppressing population build-ups in infested areas, enforcing the white-fringed beetle quarantine, conducting surveys to promptly detect new infestations, and eradicating the beetle in certain selected areas.

Needs. The most important need is a more effective means for detecting presence or absence of the white-fringed beetle. The success of this program is dependent upon the early detection of new infestations and trends in population build-up.

Potential for Accomplishment. With the new methods and materials now available, it appears possible to prevent further spread of the white-fringed beetle and to eradicate outlying infestations. This is being tested in an infestation found in New Jersey in 1954.

Effectiveness. Control operations have retarded the spread of the white-fringed beetle through suppression of beetle populations and through regulatory operations. Of the 422,500 infested acres only 12,000 acres (3 percent) are considered to be heavily infested and 150,000 acres (37 percent) have, because of control operations, apparently failed to produce a single beetle in the past two years. This compares with 36,000 acres (12 percent) heavily infested and 2,000 acres (1 percent) without infestation in 1950.

Research Support. Research on the control of the white-fringed beetle is being done by the Entomology Research Branch, Agricultural Research Service, in cooperation with state agencies.

Additional or Modified Legislation. There is no apparent need for additional legislation or modification of current legislation.

PESTICIDE REGULATORY ACTIVITIES

Transferred from Production and Marketing Administration to Agricultural Research Service in late 1953.

Objectives. The objective of the program is to carry out the provisions of the Federal Insecticide, Fungicide and Rodenticide Act of 1947, the purpose of which is to assure the general public that commercial pesticides shall be effective for the purposes for which they are sold, and that they shall not cause injury either to the user or to those who may eat treated products, as well as to assure uniformity of regulation. This is being accomplished by requiring correctness of labeling as a prerequisite to registration under the Federal law and by examining samples and taking legal action, when appropriate, against the manufacturer of pesticides moving in interstate commerce. Close cooperation with the states is maintained in carrying out these functions.

Needs. Since this legislation became operative more than 35,000 products have been registered. In excess of 4,000 new products were Federally registered last year. There was amended labeling for 3,128 additional products, and 7,419 distributors' labels were registered. The most important current need of the program is for more field investigators and supporting staff to insure adequate enforcement of the provisions of the law. It has been necessary to give priority to demands for registration of new products often at the expense of the enforcement work. With the enactment of the Miller Bill shortage of trained personnel is even more acute.

Effectiveness. In the registration program, which requires a determination of the safety of each use claimed for a pesticide, determinations along general lines are made at the Federal level and information concerning them sent to the states. The states adapt them to their special conditions. There is close consultation with the states on policy. Federal investigators obtain pesticide samples from interstate shipments. They are examined and, when violation occurs, legal action may be taken. There is cooperation with states accepting it, by which we are furnished results of their analysis for Federal action. These efforts are resulting in better products and labeling than would otherwise be possible but leave much to be desired. Many states have no pesticide regulatory laws or are not in position to cooperate due to limited facilities.

Research Support. Development of methods for analysis and tests carried out at both Federal and state levels is a necessary adjunct to control of the many new pesticides. Work on this line has been kept to a minimum because of the immediate necessities of other functions of the administration of the law.

Additional or Modified Legislation. At the present time there appears to be no need for additional or modified Federal legislation.

